NA-320 Series
Network Appliance
User's Manual

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July 2011, Version A2
Printed in Taiwan

Safety Approvals

- CE Marking
- FCC Class B(NA-320/NA-320FL)

1. FCC Compliance

This equipment has been tested and complies with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. If not installed and used in accordance with proper instructions, this equipment might generate or radiate radio frequency energy and cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measurers:
Reorient or relocate the receiving antenna.
Increase the separation between the equipment and receiver.
Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
Consult the dealer or an experienced radio/TV technician for help.
Shielded interface cables must be used in order to comply with emission limits.

Safety Precautions

Before getting started, read the following important cautions.

1. Be sure to ground yourself to prevent static charge when installing the internal components. Use a grounding wrist strap and place all electronic components in any static-shielded devices. Most electronic components are sensitive to static electrical charge.
2. Disconnect the power cords from the **NA-320 Series** before making any installation. Be sure both the system and the external devices are turned OFF. Sudden surge of power could ruin sensitive components. Make sure the **NA-320 Series** is properly grounded.
3. Do not open the system's top cover. If opening the cover for maintenance is a must, only a trained technician is allowed to do so. Integrated circuits on computer boards are sensitive to static electricity. To avoid damaging chips from electrostatic discharge, observe the following precautions:

   - Before handling a board or integrated circuit, touch an unpainted portion of the system unit chassis for a few seconds. This will help to discharge any static electricity on your body.
   - When handling boards and components, wear a wrist-grounding strap, available from most electronic component stores.

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CHAPTER 1
INTRODUCTION

This chapter contains general information and detailed specifications of the **NA-320 Series** Network Appliance Server. Chapter 1 contains the following sections:

- **General Description**
- **Features**
- **Specifications**
- **Dimensions**
- **I/O Outlets**

1.1 General Description

The NA-320 is a 1U and desktop and NA-320R is a 1U and rackmount network security hardware platform for VPN, firewall and other network security applications, which consists can support of Intel® ATOM D410/D510 1.66GHz FSB 667; 512K/1M L2 Cache. This platform supports the 1U desktop and 1U rack mount form factor, and the system supports DDR2 667 memory with single channel up to maximum 2 GB for one SODIMM slot. In the meantime, the platform also can support 6 Gigabit LAN ports which can provide best throughput. For the purpose to store event log data, it can deploy one 2.5" SATA2 HDD (NA-320&NA-320FL) or two 2.5" SATA2 (default) or one 3.5" SATA2 HDD (optional) in (NA-320R). This platform can be easily enabled through application programs to make a user-friendly appliance for customers, and provide the highest ever performance of encryption and decryption.

1.2 Features

Low power and high performance for network security field applications. NA-320 series supports Intel® ATOM D510 1.66GHz FSB 533; 512K/1M L2 Cache.(D410 for optional)

- Supports Six 10/100/1000Mbps Ethernet ports
- Supports BIOS redirected to COM port features
- Supports one 2.5" SATA2 Hard Disk for NA-320&NA-320FL
  Supports Two 2.5" SATA2 or one 3.5" SATA2 (optional) Hard Disk for NA-320R
- Reasonable computing performance and throughput for processor and LAN ports
- Suitable for Network Appliance; VPN, network bandwidth controller, firewall and UTM

1.3 Specifications

1.3.1 System

- **System CPU**
  - Intel® D510 1.66GHz FSB 533; 512K/1M L2 Cache processor onboard.(D410 for optional)
- **BIOS**
  - AMI 16Mbit PnP Flash BIOS with function of BIOS redirected to COM port
- **System Memory**
  - One DDR2 667 SODIMM up to 2 GB(NA-320,NA-320R)
  - One DDR2 667 SODIMM up to 2 GB(Wide tempature support is available upon request (NA-320FL)

NOTE *Due to chipset limitation, system memory controller supports the following DDR2 Data Transfer Rates, SODIMM Modules and DRAM Device Technologies:*
DDR2 Data Transfer Rate: 667 (PC 5300), non-ECC
2 Ranks of x16 SDRAMs (Double-sided)
1 Rank of x16 SDRAMs (Single-sided)

- **HDD Interface**
  - One 2.5" SATA2 HDD for NA-320
  - One 2.5" SATA2 HDD (Wide tempature support is available upon request (NA-320FL)
  - Two 2.5" SATA2 or one 3.5" SATA2 (optional) Hard Disk for NA-320R
- **Compact Flash**
  - One Compact Flash Type II (Wide tempature support is available upon request (NA-320FL)
  - Network Interface
  - Six 10/100/1000Mbps Ethernet (Intel® 82583V)
    One group LAN by pass for optional(NA-320&NA-320FL)
- **Watchdog Timer**
  - 255 stepping for porting

- **USB**
  - Two USB ports in the rear side
- **Console**
  - RS-232 Console port is the rear side(RJ-type)
- **Power**
  - 1 x 12V, 5A power adapter for NA-320,NA-320FL
  - AC to DC 84W open frame for NA-320R
- **OS Compatibility**
  - Redhat 2.6 Kernel

1.3.2 Mechanical / Environmental

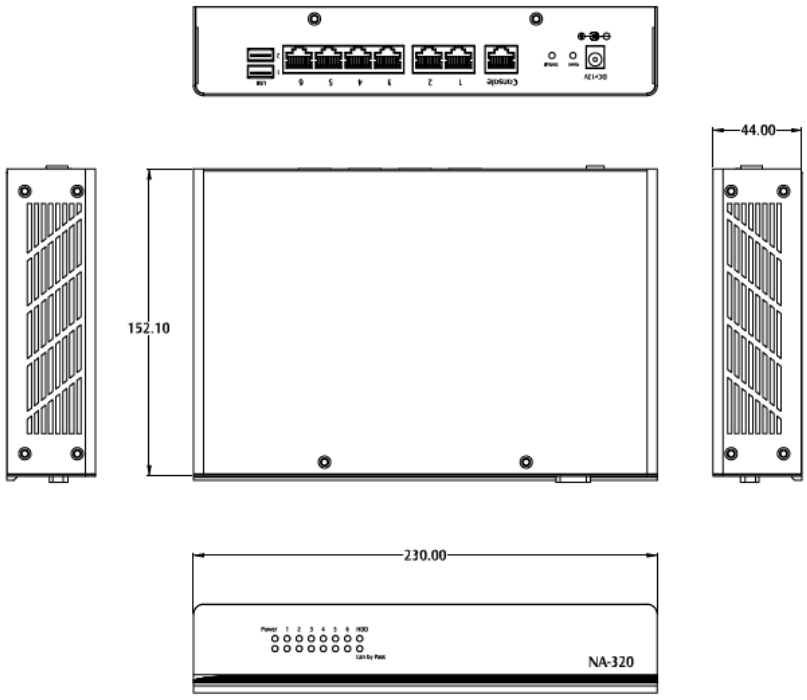
- **Form Factor**
  - 1U Desktop for NA-320 & NA-320FL
  - 1U Rack mount for NA-320R
- **LED**
  - Power, HDD, Link/Act with transfer rate
  - LAN by pass LED and promgramable LED (NA-320,NA-320FL for optional)
- **Operation Temperature**
  - 0℃ ~ 40℃ (32℉ ~ 104℉)for NA-320&NA-320FL
  - 0℃ ~ 45℃ (32℉ ~ 113℉)for NA-320R
- **Storage Temperature**
  - -20℃ ~ 70℃ (-4℉ ~ 158℉)
- **Humidity**
  - 10% - 95% RH, non-condensing
- **Chassis Material**
  - Steel
- **Dimensions**
  - 44mm (1.73") (H) x 230mm (9.00") (W) x 152.1mm (5.98") (D) for NA-320
  - 44mm (1.73") (H) x 230mm (9.00") (W) x 153.5mm (6.04") (D) for NA-320FL
  - 44mm(1.73'')(H) x 430mm (16.93") (W) x 248mm (9.76") (D) for NA-320R
- **Weight (Net/Gross)**
  - 1.295Kg / 2.295Kg (NA-320)
  - 2.0 Kg/3.0 Kg(NA-320FL)

- 3.2Kg/4.2Kg (NA-320R)

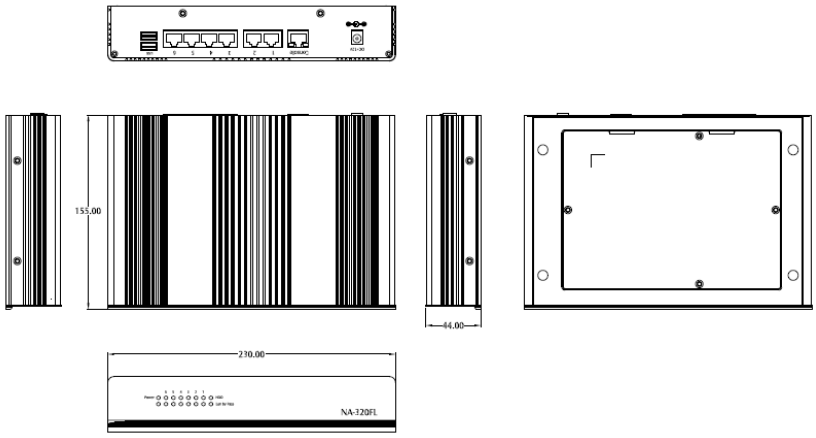
NOTE *All specifications and images are subject to change without notice.*

1.4 Dimensions and Outlines

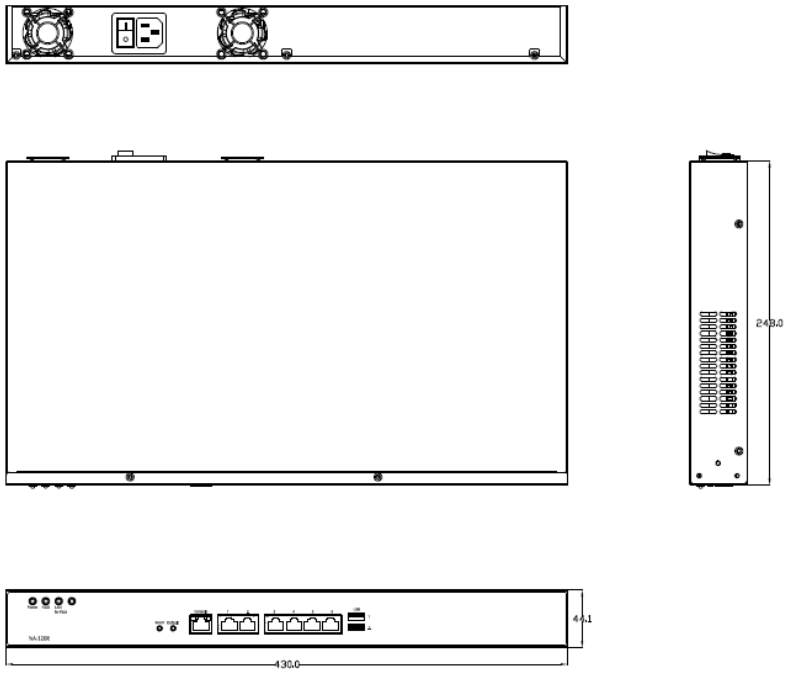
NA-320



NA-320FL



NA-320R



1.5 I/O Outlets

Locate the front panel I/O outlets on the **NA-320 Series** server to connect serial and Ethernet interface devices.

1.5.1 Front Panel for NA-320 &NA-320FL

Front view

Front view

- **LAN By-Pass LED(for optional)**

  While running the LAN By-Pass function, the LED always lights up.

- **Programmable LED (for optional)**

  A sample code will be provided that allow users to define their own function.

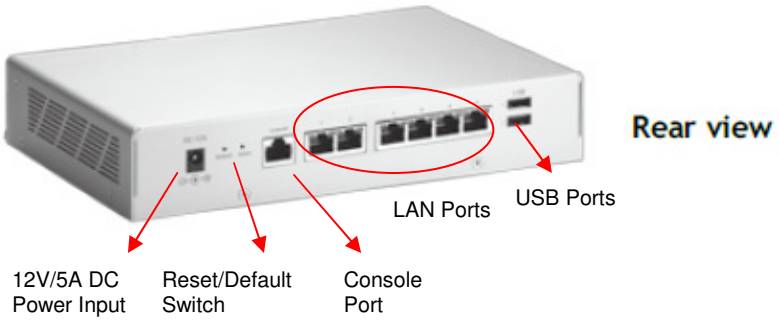
- **Power LED**
  It will be lighting when the server is powered on to perform diagnostic tests and check a proper operation.

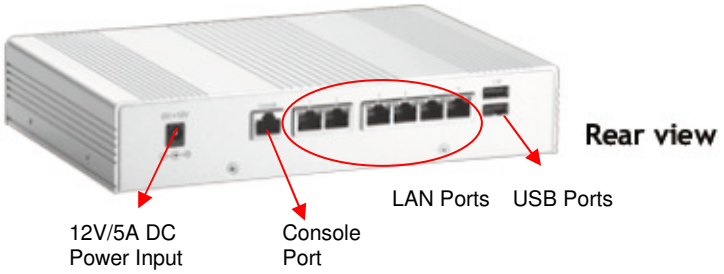
- **LAN Link LED**
  It will be lighting when a twisted pair is connected to another Ethernet device on the port. It shows network transfer rate while making a connection.

- **Activity LED**
  It will be lighting when the server is transmitting or receiving a packet through the twisted pair ports.

- **HDD LED**
  The LED flashes when transmitting or receiving any signals.

1.5.2 Rear Panel for NA-320 &NA-320FL





- **Console port –** RS-232 Console port is for the command of line interface and of diagnostic support by P.O.S.T (Power on Self Test).
- **Reset Switch –** It is is for reset the system to reboot your computer instead of turning OFF the power switch. It is a better way to reboot your system for a longer life of the system's power supply.(for optional)
- **Default Switch –** The sample code will be provided that allows users to define their own function. For example, when the system has any problems, this switch can support to reset it to the customer's OS default settings if

our customer's OS supports this application. (for optional)

- **Link/Active LED (Single color)for LAN port #1, port#2, port#3, port#4, port#5, port#6**

  1. The orange LED is on when the LAN port connection is working.
  2. The LED flashes when transmitting or receiving any signals to or from the appliance.
  3. The LED is dark when the appliance is off.

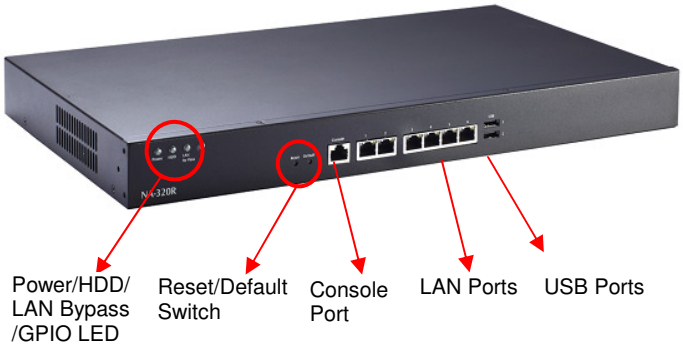
- **Transmitted LED for LAN port #1, port#2, port#3, port#4, port#5, port#6**

  1. The double-color LED light indicates 10/100/1000Mbps transfer rate.

`Transfer Rate	LED Light Color
10Mbps	Dark
100Mbps	Green
1000Mbps	Amber

  2. When the amber-color LED light is radiating, it should be 1000Mbps transfer rate at this moment.
  3. When the green-color LED light is radiating, it should be 100Mbps transfer rate at this moment
  4. If the LED is dark and Link/Active LED is light on or flashing, it should be 10Mbps transfer rate.
  5. When this LED and Link/Active LED both are dark. No networking devices are attached

1.5.3 Front Panel for NA-320R



- **Power on LED**
  System and power on
- **HDD LED**
  Link/Active LED (single color)
  1. The green LED is on when it is a normal HD connection.
  2. The LED flashes when transmitting or receiving any signals.
- **LAN By-Pass LED**
  While running the LAN By-Pass function, the LED always lights up.
- **GPIO LED**

  A sample code will be provided that allow users to define their own function.
- **Link/Active LED (Single color)for LAN port #1, port#2, port#3, port#4, port#5 and port#6**
  1. The orange LED is on when the LAN port connection is working.
  2. The LED flashes when transmitting or receiving any signals to or from the appliance.
  3. The LED is dark when the appliance is off.

- **Transmitted LED for LAN port #1, port#2, port#3, port#4, port#5 and port#6**
  1. The double-color LED light indicates 10/100/1000Mbps transfer rate.

`Transfer Rate	LED Light Color
10Mbps	Dark
100Mbps	Green
1000Mbps	Amber

  2. When the amber-color LED light is radiating, it should be 1000Mbps transfer rate at this moment.
  3. When the green-color LED light is radiating, it should be 100Mbps transfer rate at this moment
  4. If the LED is dark and Link/Active LED is light on or flashing, it should be 10Mbps transfer rate.
  5. When this LED and Link/Active LED both are dark. No networking devices are attached

- **Console port –** RJ RS-232 Console port is for the command of line interface and of diagnostic support by P.O.S.T (Power on Self Test).
- **Reset Switch –** It is is for reset the system to reboot your computer instead of turning OFF the power switch. It is a better way to reboot your system for a longer life of the system's power supply.
- **Default Switch –** The sample code will be provided that allows users to define their own function. For example, when the system has any problems, this switch can support to reset it to the customer's OS default settings if our customer's OS supports this application

1.5.4 Rear Panel for NA-320R

MEMO

CHAPTER 2
HARDWARE DESCRIPTION

The **NA-320 Series** are convenient for your various hardware configurations. The chapter 2 will help you get familiar with the hardware.

2.1 Checklist

The package bundled with your **NA-320 Series** should contain the following items:

The **NA-320 Series** network appliance hardware platform

- DC Power Adapter x 1,Power cord x 1(NA-320), Power cord x 1(NA-320R)
- Utility CD (including this User's Manual and driver, sample code) x 1
- Mounting screws for disk drive and additional screws for this appliance's spareparts
- Installed NA-320 cable kits (1 x S-ATA cable, 1 x SATA2 power cable, 1 x console cable)
- Installed NA-320R cable kits (2 x S-ATA cable, 1 x SATA2 power cable, 1 x console cable)
- Optional cable kits (1 x PS/2 KB,1x Y-type cable for KB/Mouse,1xVGA cable,1xLAN cable)
- Plastic stand for stack–up x 4
- 1U Rackmount ear it (NA-320R)

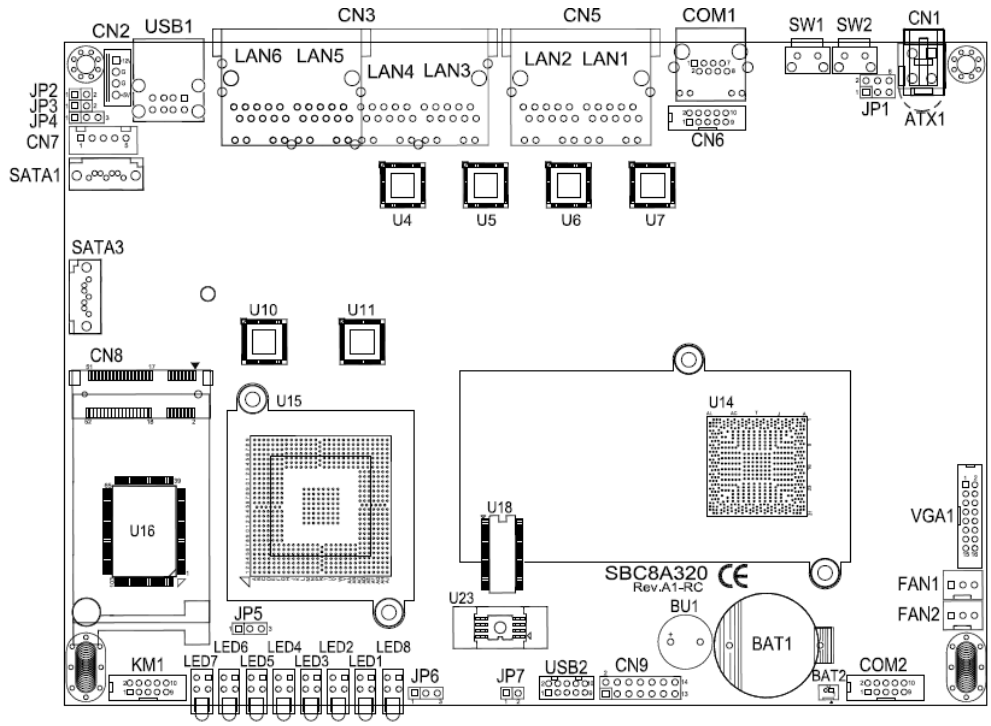
If you cannot find this package or any items are missing, please contact AXIOMTEK distributors immediately. If you order any optional components, the package might contain those additional hardware or documents accordingly.

2.2 Memory Module (SODIMM)

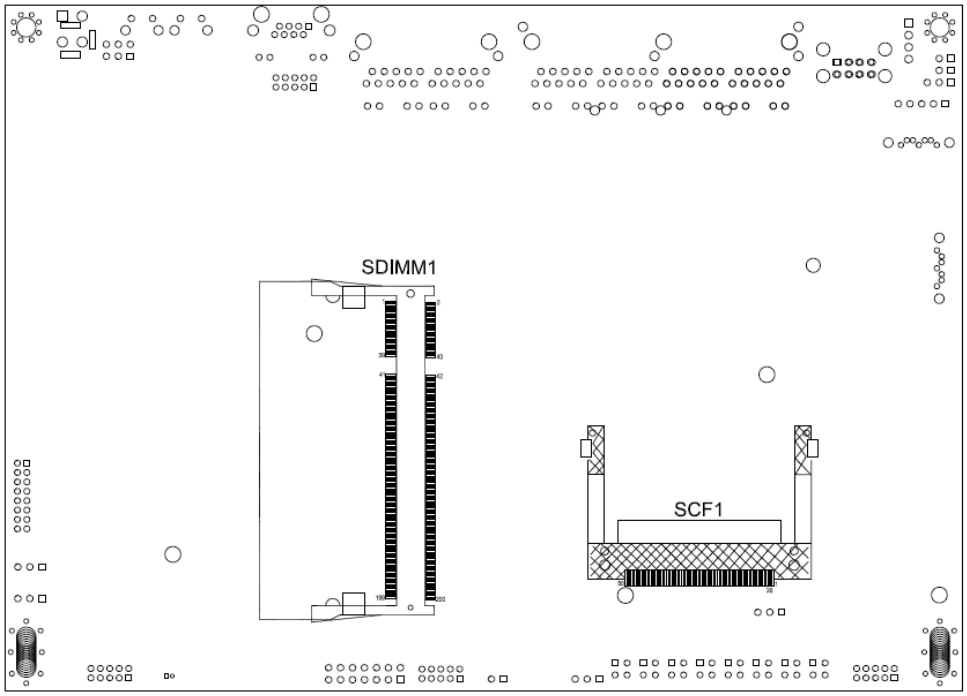
The main board supports one DDR2 667 SODIMM socket. Maximum memory capacity is up to 2GB None-ECC unbuffer memory.
The following steps show you how to install the memory modules:

1 Push down each side of the SODIMM socket.
2 Align the memory module with the socket that notches of memory module must match the socket keys for a correct installation.
3 Install the memory module into the socket and push it firmly down until it is fully seated. The socket latches are levered upwards and clipped on to the edges of the DIMM.
4 Install any remaining SODIMM modules.

2.3 Board Layout



Component Side



Solder Side

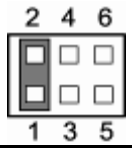
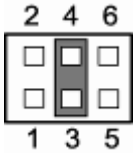
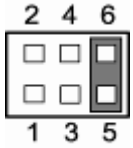
2.4 Jumper Settings

This section provides the information about jumpers and connectors of **NA-320 Series**. Proper jumper settings configure the main board in this appliance to meet your application purpose. We are herewith listing a summary table of all jumpers and default settings for onboard devices, respectively.

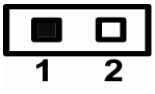
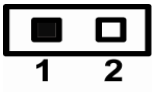
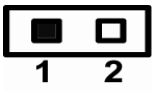
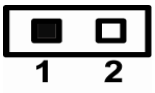
Jumper	Definition	Jumper Settings	Function
JP1	TACT SW2 Selection	Short (1-2)	Power On/Off
		Short (3-4)	Reset(Default)
		Short (5-6)	GPI
JP2/JP3	LAN By-Pass Trigger 1/2	Short/Open	LAN5 & LAN6 Bypass Trigger 1 GPO Low Level (By Pass Enable)
		Open/Short	LAN5 & LAN6 Bypass Trigger 2 GPO High Level (By Pass Disable)(Default)
JP4	LAN By-Pass Function	Short (1-2)	LAN5 & LAN6 Bypass Always Disable
		Short (2-3)	LAN5 & LAN6 Bypass Always Enable
		Open	LAN5 & LAN6 Bypass control by JP2 or JP3 or WDT(appendix A)(Default)
JP5	Compact Flash Power Selection	Short (1-2)	CF Voltage Select : 3.3V(Default)
		Short (2-3)	CF Voltage Select : 5V
JP6	Clear CMOS Setting	Short (1-2)	Normal(Default)
		Short (2-3)	Clear BIOS CMOS
JP7	Auto Power Button Mode Selection	Open	Auto Power On (Default)
		Short	Power on By Power button

2.4.1 Switch Button Selection Jumper (JP1)

Use this jumper to select the Switch Button Function.

Description	Function	Jumper Setting
Switch （SW2） Button Selection	Power On/Off	**JP1** 
	Reset (Default)	**JP1** 
	GPIO	**JP1** 

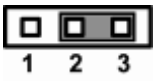
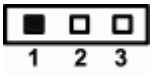
2.4.2 LAN Bypass Trigger Selection Jumper (JP2, JP3)

Description	Function	Jumper Setting
LAN Bypass Trigger 1,2 Selection	Not install	**JP2**  **JP3** 
	Low Level GPIO (By Pass Enable)	**JP2** **JP3** 
	High Level GPIO(Default) (By Pass Disable)	**JP2**  **JP3**

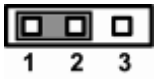
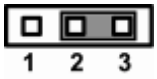
NOTE *If the jumper setting is "Low Level GPIO", LAN Bypass function will still be started even when power supply is normally input. The default setting is "High Level GPIO" that LAN Bypass function is not working when power supply is normally input.*

2.4.3 LAN ByPass Selection Jumper (JP4)

Use this jumper to select the LAN Bypass Function.

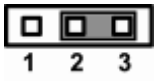
Description	Function	Jumper Setting
LAN By-Pass Function	Disabled	**JP4**
	Always By-Pass	**JP4** 
	Trigger By JP2 ; JP3 or WDT (Default)	**JP4** 

2.4.4 CompactFlash™ Voltage Selection Jumper (JP5)

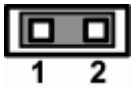
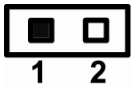
Description	Function	Jumper Setting
Compact Flash Voltage Selection	3.3V (Default)	**JP5** 
	5V	**JP5** 

2.4.5 Clear CMOS Jumper (JP6)

You may need to use this jumper is to clear the CMOS memory if incorrect settings in the Setup Utility.

Description	Function	Jumper Setting
CMOS Clear	Normal (Default)	**JP6**
	Clear CMOS	**JP6** 

2.4.6 Auto Power Button Jumer (JP7)

Description	Function	Jumper Setting
Auto Power Button Mode Selection	Always Power Off ; ATX Mode	**JP7** 
	Always Power On (Default)	**JP7** 

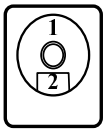
2.5 Connectors

Connectors connect the board with other parts of the system. Loose or improper connection might cause problems. Make sure all connectors are properly and firmly connected. Here is a summary table shows you all connectors on the main board.

Connectors	Label
DC-In Power Jack for NA-320 & NA-320FL	CN1
Power Out Connector	CN2
LAN3 ~ LAN6 Connector	CN3
LAN1 ~ LAN2 Connector	CN5
LCM or SATA Power Connector	CN7
Mini Card Connector	CN8
Front Panel Bezel Connector	CN9
Battery Connector	BAT1
Serial Port1 (For Console) Connector	COM1
Serial Port2 Connector	COM2
CPU FAN Connector	FAN1
System FAN Connector	FAN2
PS2 Keyboard/Mouse Connector	KM1
Serial ATA Connector	SATA1
Serial ATA Connector	SATA3
Compact Flash™ Socket	SCF1
DDR II SO-DIMM Socket	SDIMM1
USB Port0 ~ Port1 Connector	USB1
USB Port2 ~ Port3 Connector	USB2
VGA Connector	VGA1
TACT SW1(GPI Switch)	SW1
TACT SW2(Power Button; Reset or GPI Switch)	SW2
Power Input +12V Connector for NA-320R	ATX1

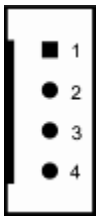
2.5.1 DC-In Power Jack (CN1) for NA-320 & NA-320FL

Pin	Signal
1	+5V
2	GND



2.5.2 Power out Connector (CN2)

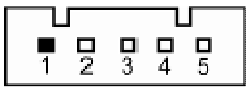
Pin	Signal
1	+12V
2	GND
3	GND
4	+5V



2.5.3 LCM or SATA Power Connector (CN7)

Support 2.5" SATA HDD power or LCM module

Pin	Signal
1	+5V
2	RXD of COM2
3	No Connection
4	TXD of COM2
5	GND

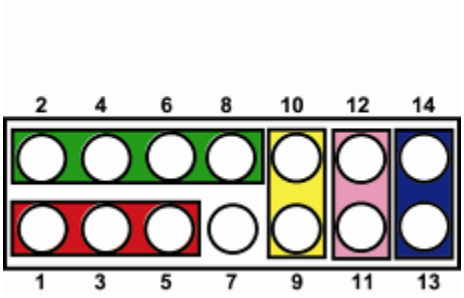


2.5.4 Mini Card Connector (CN8)

Pin	Signal	Pin	Signal
1	PCIE_WAKE-	2	+3.3V
3	N.C	4	GND
5	N.C	6	+1.5 V
7	GND	8	N.C
9	GND	10	N.C
11	PCIE_CLK-	12	N.C
13	PCIE_CLK+	14	N.C
15	GND	16	N.C
17	N.C	18	GND
19	N.C	20	N.C
21	GND	22	PCIE_RESET-
23	N.C	24	+3.3V_SBY
25	N.C	26	GND
27	GND	28	+1.5V

29	GND	30	SMB_CLK
31	N.C	32	SMB_DATA
33	N.C	34	GND
35	GND	36	USB_D-
37	N.C	38	USB_D+
39	N.C	40	GND
41	N.C	42	N.C
43	N.C	44	N.C
45	N.C	46	N.C
47	N.C	48	+1.5V
49	N.C	50	GND
51	N.C	52	+3.3V

2.5.5 Front Panel Bezel Connector (CN9)



1. **Power LED：**
   This 3-pin connector (Pin 1, 3, 5) connects a LED indicator to the system power switch on the case. Pin 1 is assigned as +, and Pin 3, Pin 5 as -. The Power LED lights up when the system is powered ON.
2. **External Speaker and Internal Buzzer Connector：**
   This 4-pin connector (Pin 2, 4, 6, 8) can be connected to the case-mounted speaker unit or internal buzzer. While

connecting the CPU card to an internal buzzer, please short pins 2-4; while connecting to an external speaker, you need to set pins 2-4 to Open and connect the speaker cable to pin 8 (+) and pin 2 (-).

3. **ATX Power On/Off Button :**
   This 2-pin connector (Pin 9, 10) connects the front panel's ATX power button to the CPU card, which allows users to control ATX power supply to be power on/off.

4. **System Reset Switch :**
   This 2-pin connector (Pin 11, 12) can be connected to the case-mounted reset switch that reboots your computer instead of turning OFF the power switch. It is a better way to reboot your system for a longer life of the system's power supply.

5. **HDD Activity LED :**
   This connection is linked to hard drive activity LED on the control panel. LED flashes when HDD is being accessed. The 2-pin connector (Pin 13, 14) connects the hard disk drive to the front panel HDD LED, Pin 13 assigned as -, and Pin 14 as +.

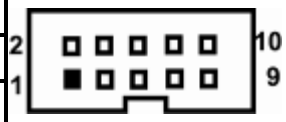
2.5.6 Serial Port1 (For Console) Connector (COM1)

The COM1 Port connector is a RJ-type connector.

Pin	Signal
1	Data Set Ready (DSR)
2	Request to Send (RTS)
3	Ground (GND)
4	Transmit Data (TXD)
5	Receive Data (RXD)
6	Data Carrier Detect (DCD)
7	Clear to Send (CTS)
8	Data Terminal Ready (DTR)

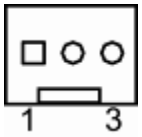
2.5.7 Serial Port2 Connector (COM2)

Pin	Signal
1	Data Carrier Detect (DCD)
2	Data Set Ready(DSR)
3	Receive Date(RXD)
4	Request to Send(RTS)
5	Transmit Data(TXD)
6	Clear to Send(CTS)
7	Data Terminal Ready
8	Ring Indicator(RI)
9	GND
10	NC



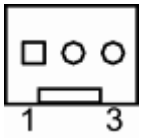
2.5.8 CPU FAN Connector (FAN1)

Pin	Signal
1	Ground
2	+12V
3	Rotation Detection



2.5.9 System FAN Connector (FAN2)

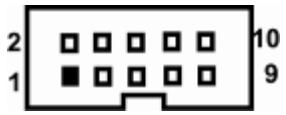
Pin	Signal
1	Ground
2	+12V
3	Rotation Detection



2.5.10 PS2 Keyboard/Mouse Connector (KM1)

The board supports a keyboard and Mouse interface. Connector CN14 is for PS/2 keyboard Connection VIA "Y" Cable.

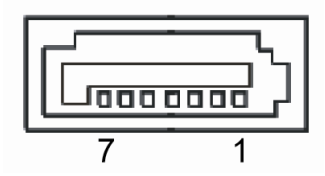
Pin	Signal	Pin	Signal
1	VCC	2	K/B Data
3	K/B CLK	4	GND
5	VCC	6	VCC
7	M/S Data	8	M/S CLK
9	GND	10	NC



2.5.11 Serial ATA Connector: SATA1, SATA3

The SATA connector is for high-speed SATA interface port and it can be connected to hard disk device.

Pin	Signal	Pin	Signal
1	GND	2	TX+
3	TX-	4	GND
5	RX-	6	RX+
7	GND		



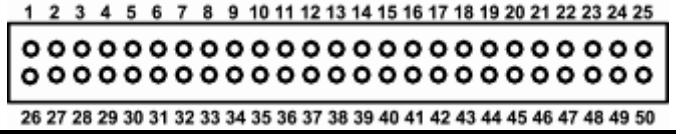
SATA1

SATA3

2.5.12 Compact Flash™ Socket：SCF1

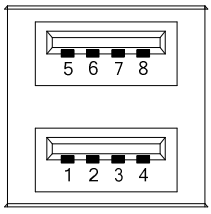
Pin	Signal	Pin	Signal
1	GND	2	Data 3
3	Data 4	4	Data 5
5	Data 6	6	Data 7
7	CS0#	8	Address 10
9	ATASEL	10	Address 9
11	Address 8	12	Address 7
13	VCC	14	Address 6
15	Address 5	16	Address 4
17	Address 3	18	Address 2
19	Address 1	20	Address 0
21	Data 0	22	Data 1
23	Data 2	24	IOCS16#
25	CD2#	26	CD1-
27	Data 11	28	Data 12
29	Data 13	30	Data 14
31	Data 15	32	CS1#

33	VS1#	34	IORD#
35	IOWR#	36	WE#
37	INTR	38	VCC
39	CSEL#	40	VS2#
41	RESET#	42	IORDY#
43	DMAREQ	44	DMAACK-
45	DASP#	46	PDIAG#
47	Data 8	48	Data 9
49	Data 10	50	GND



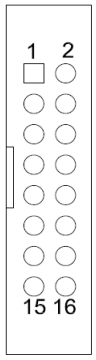
2.5.13 USB Port0~Port1 Connector (USB1)

Pin	Signal
1	USB_POWER
2	USB_PN0
3	USB_PP0
4	GND
5	USB_POWER
6	USB_PN1
7	USB_PP1
8	GND



2.5.14 VGA Connector (VGA1)

Pin	Signal	Pin	Signal
1	RED	2	DETECT
3	GREEN	4	NC.
5	BLUE	6	GND
7	VCC	8	DDC DATA
9	GND	10	GND
11	GND	12	Horizontal Sync
13	GND	14	Vertical Sync
15	DDC CLK	16	NC.



2.5.15 LED1~LED8

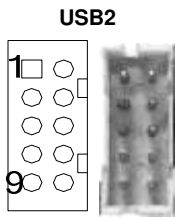
LED	Signal
LED1	For Lan1 Up : LINK (Green : LINK100 ; Amber : LINK1000) Down : Active (Orange)
LED2	For Lan2 Up : LINK (Green : LINK100 ; Amber : LINK1000) Down : Active (Orange)
LED3	For Lan3 Up : LINK (Green : LINK100 ; Amber : LINK1000) Down : Active (Orange)
LED4	For Lan4 Up : LINK (Green : LINK100 ; Amber : LINK1000) Down : Active (Orange)
LED5	For Lan5 Up : LINK (Green : LINK100 ; Amber : LINK1000) Down : Active (Orange)

LED6	For Lan6 Up : LINK (Green : LINK100 ; Amber : LINK1000) Down : Active (Orange)
LED7	Up : Power LED (Green) Down : GPIO (Programmable LED; Option)
LED8	Up : HDD LED (Green) Down : Lan Bypass LED (Option)

2.5.16 USB Port2~Port3 Connector (USB2)

The Universal Serial Bus (USB) connector on the board is for the installation of peripherals supporting the USB interface. **USB2** is a 10-pin standard onboard USB connectors.

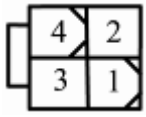
Pin	Signal	Pin	Signal
1	USB_ POWER	2	USB _POWER
3	USB _PN2	4	USB _PN3
5	USB _PP2	6	USB _PP3
7	GND	8	GND
9	GND	10	GND



2.5.17 Power Input 12V Connector (ATX1) for NA-320R

To connect with the 12V power supply .

Pin	Signal
1	GND
2	GND
3	+12V
4	+12V



CHAPTER 3
AMI BIOS SETUP UTILITY

This chapter provides users with detailed description how to set up basic system configuration through the AMIBIOS8 BIOS setup utility.

3.1 Starting

To enter the setup screens, follow the steps below:

1. Turn on the computer and press the <Del> key immediately.
2. After you press the <Delete> key, the main BIOS setup menu displays. You can access the other setup screens from the main BIOS setup menu, such as the Chipset and Power menus.

3.2 Navigation Keys

The BIOS setup/utility uses a key-based navigation system called hot keys. Most of the BIOS setup utility hot keys can be used at any time during the setup navigation process.

These keys include <F1>, <F10>, <Enter>, <ESC>, <Arrow> keys, and so on.

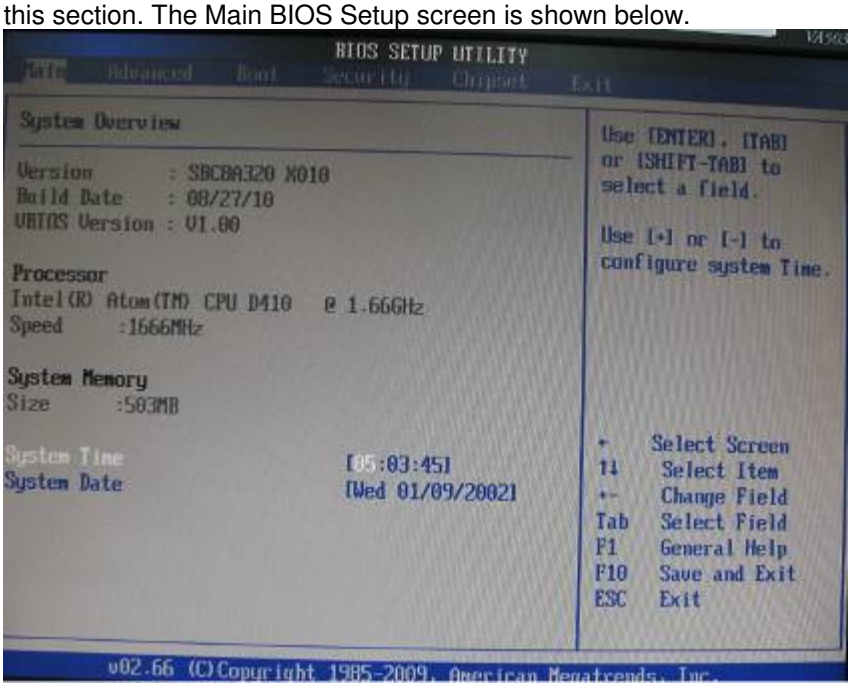
Note *Some of navigation keys differ from one screen to another.*

← Left/Right	The Left and Right <Arrow> keys allow you to select a setup screen.
↑↓ Up/Down	The Up and Down <Arrow> keys allow you to select a setup screen or sub-screen.
+– Plus/Minus	The Plus and Minus <Arrow> keys allow you to change the field value of a particular setup item.
Tab	The <Tab> key allows you to select setup fields.
F1	The <F1> key allows you to display the General Help screen.

F10	The <F10> key allows you to save any changes you have made and exit Setup. Press the <F10> key to save your changes.
Esc	The <Esc> key allows you to discard any changes you have made and exit the Setup. Press the <Esc> key to exit the setup without saving your changes.
Enter	The <Enter> key allows you to display or change the setup option listed for a particular setup item. The <Enter> key can also allow you to display the setup sub- screens.

3.3 Main Menu

When you first enter the Setup Utility, you will enter the Main setup screen. You can always return to the Main setup screen by selecting the Main tab. There are two Main Setup options. They are described in this section. The Main BIOS Setup screen is shown below.



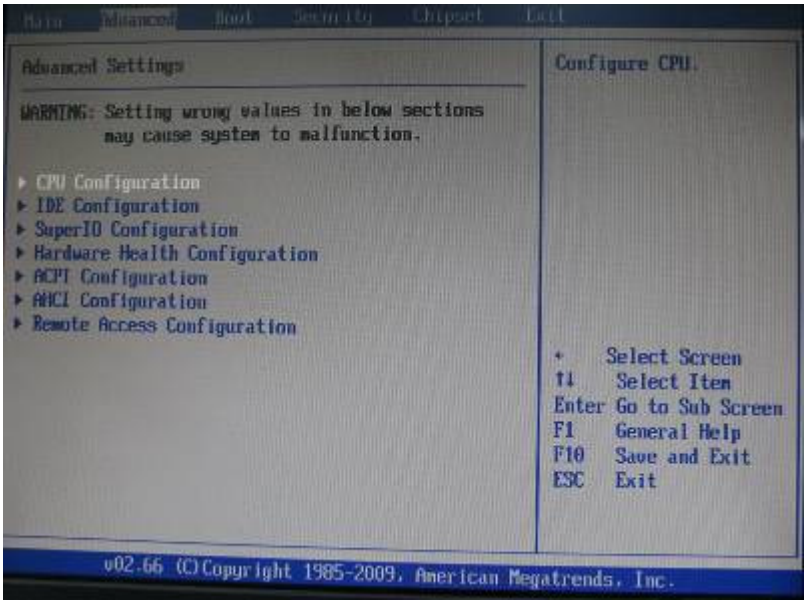
- **System Time/Date**
  Use this option to change the system time and date. Highlight *System Time* or *System Date* using the <Arrow> keys. Enter new values through the keyboard. Press the <Tab> key or the <Arrow> keys to move between fields. The date must be entered in MM/DD/YY format. The time is entered in HH:MM:SS format.

3.4 Advanced Menu

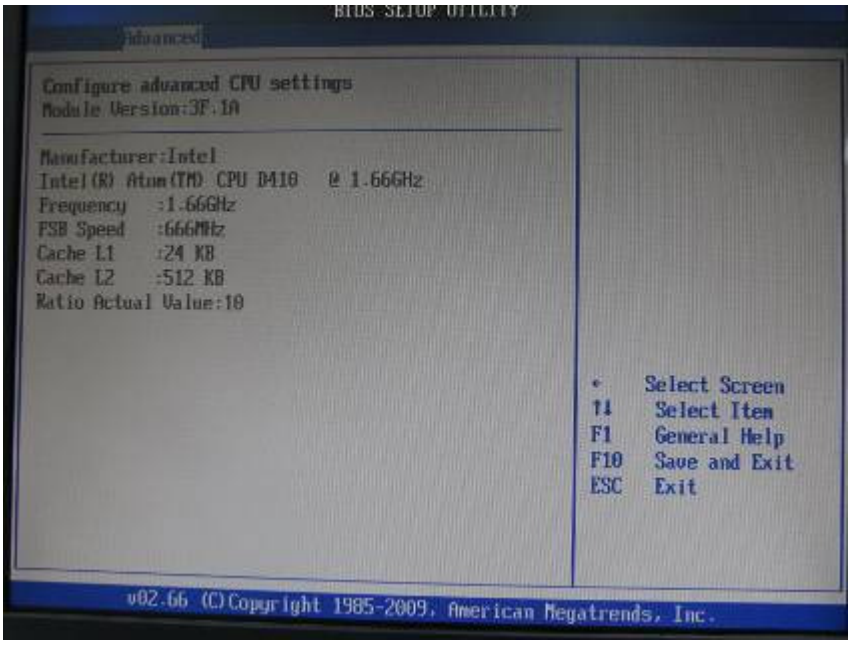
The Advanced menu allows users to set configuration of the CPU and other system devices. You can select any of the items in the left frame of the screen to go to the sub menus:

- CPU Configuration
- IDE Configuration
- Hardware Health Configuration
- ACPI Configuration
- APM Configuration
- MPS Configuration
- Remote Access Configuration
- USB Configuration

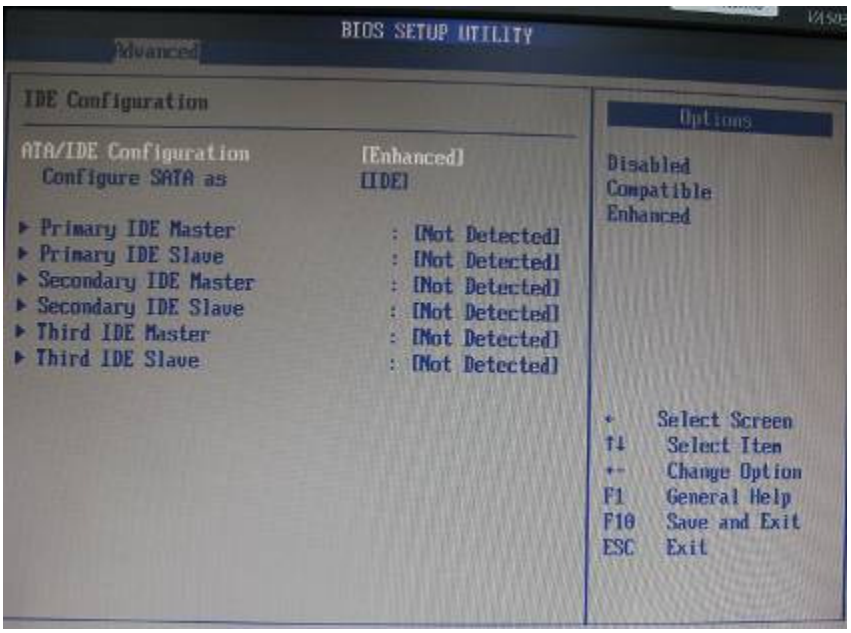
For items marked with "►", please press <Enter> for more options.



- **CPU Configuration**
  This screen shows the CPU Configuration, and you can change the value of the selected option.

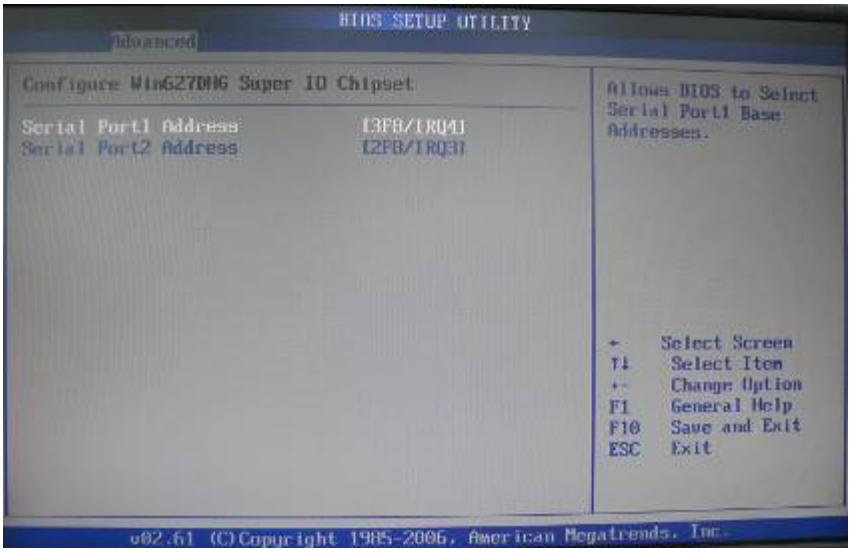


- **IDE Configuration**
  You can use this screen to select options for the IDE Configuration, and change the value of the selected option. A description of the selected item appears on the right side of the screen. For items marked with "►", please press <Enter> for more options.



- **ATA/IDE Configuration**
  Use this item to specify the integrated IDE controller. There are three options for your selection: Disable, Compatible and Enhanced.
- **Legacy IDE Channels**
  When the ATA/IDE Configuration is set to Compatible, this item will be displayed.
- **Primary/Secondary/Third/IDE Master/Slave**
  Select one of the hard disk drives to configure IDE devices installed in the system by pressing <Enter> for more options.

- **Super IO Configuration**
  You can use this screen to select options for the Super IO Configuration, and change the value of the selected option. A description of the selected item appears on the right side of the screen.



- **Serial Port1 Address**

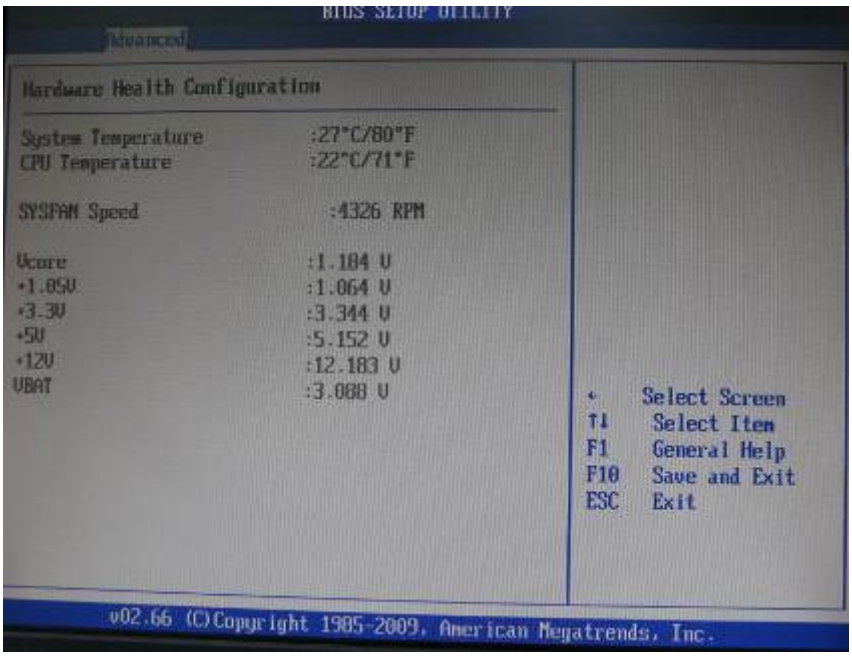
This option specifies the base I/O port address and Default setting is 3F8. Here are the options for your selection, Disabled.

- **Serial Port2 Address**

This option specifies the base I/O port address and Default setting is 2F8. Here are the options for your selection, Disabled.

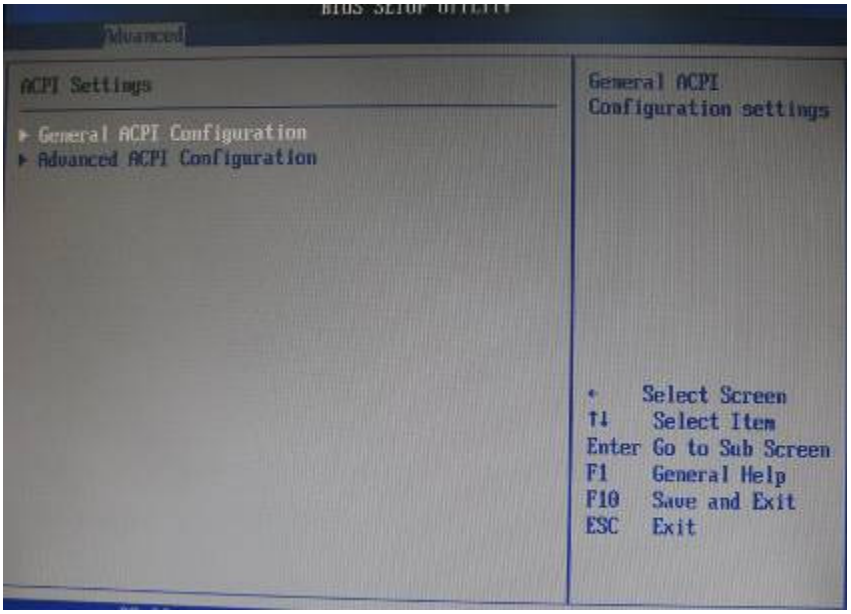
- **Hardware Health Configuration**

This screen shows the Hardware Health Configuration, and a description of the selected item appears on the right side of the screen

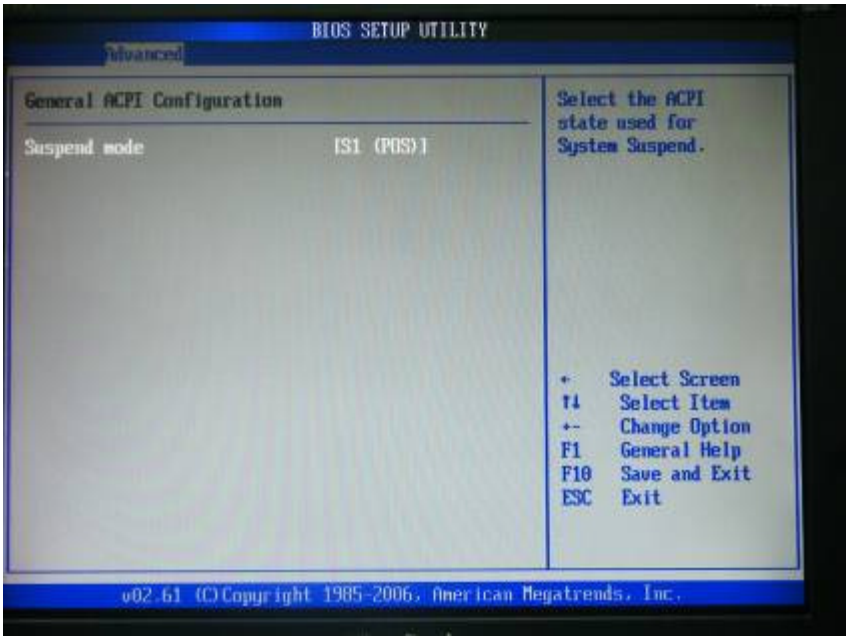


- **System Temperature**
  Show you the current system temperature.
- **CPU Temperature**
  These read-only fields show the functions of the hardware thermal sensor by CPU thermal diode that monitors the chip blocks to ensure a stable system.
- **Vcore 12V / 5V / 3.3V**
  Show you the voltage of 12V / 5V / 3.3V and etc.

- **ACPI Settings**
  You can use this screen to select options for the ACPI Settings, and change the value of the selected option. A description of the selected item appears on the right side of the screen.


Advanced
ACPI Settings
General ACPI Configuration
Advanced ACPI Configuration
General ACPI Configuration settings
Select Screen
Select Item
Enter Go to Sub Screen
F1 General Help
F10 Save and Exit
ESC Exit

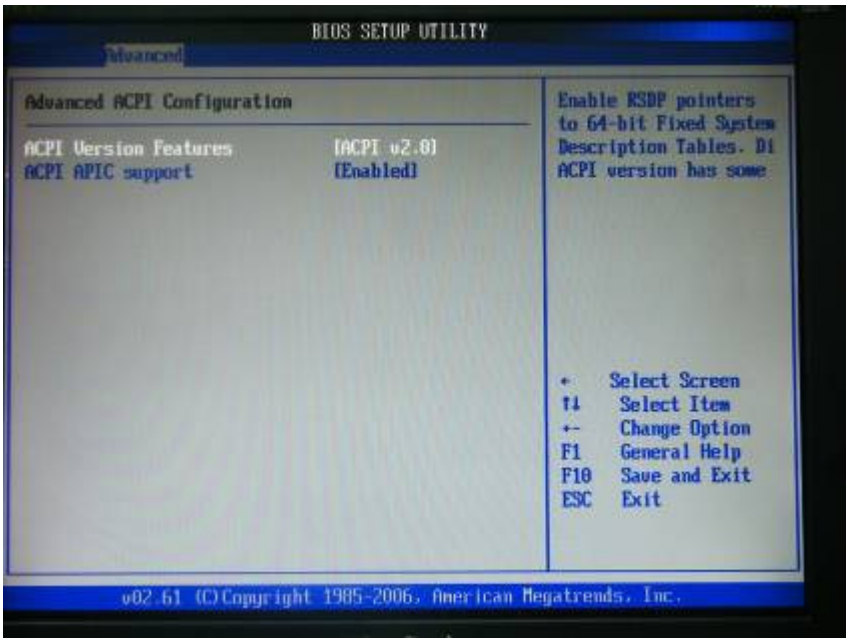
- **General ACPI Configuration**
  Scroll to this item and press <Enter> to view the General ACPI Configuration sub menu, which contains General ACPI (Advanced Configuration and Power Management Interface) options for your configuration.



  - **Suspend mode**
    After the selected period of system inactivity (1 minute to 1 hour), all devices except the CPU shut off. The default value is "S1".

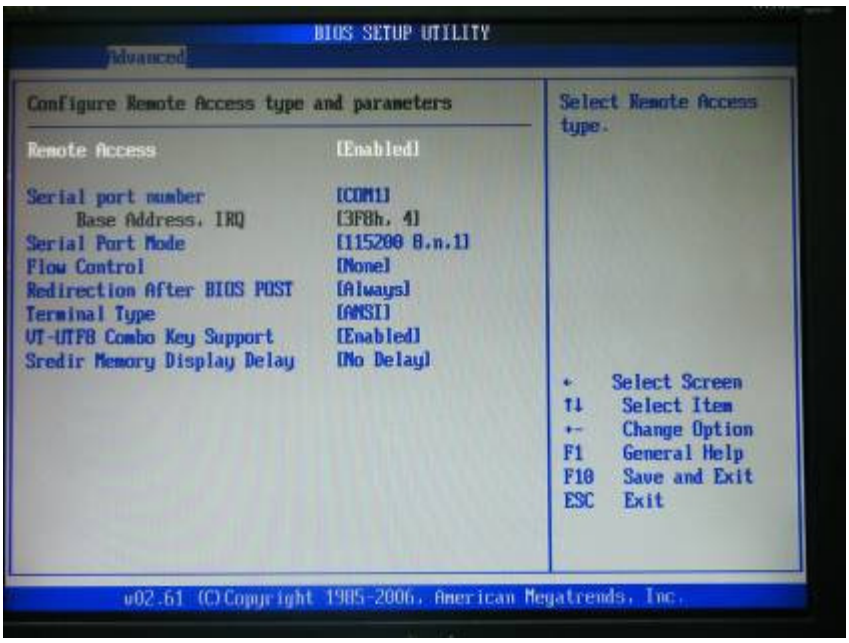
Disabled	System will never enter SUSPEND mode
1/2/4/6/8/10/20/30/40 Min/1 Hr	Defines the continuous idle time before the system entering SUSPEND mode. If any item defined in (J) is enabled & active, SUSPEND timer will be reloaded.

- **Advanced ACPI Configuration**
  Scroll to this item and press <Enter> to view the Advanced ACPI Configuration sub menu, which contains Advanced ACPI (Advanced Configuration and Power Management Interface) options for your configuration.


BIOS SETUP UTILITY
Advanced
Advanced ACPI Configuration
ACPI Version Features [ACPI v2.0]
ACPI APIC support [Enabled]
Enable RSDP pointers to 64-bit Fixed System Description Tables. Di ACPI version has some
← Select Screen
↑↓ Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit
v02.61 (C)Copyright 1985-2006, American Megatrends, Inc.

  - **ACPI Version Features**
    This item shows ACPI's version.
  - **ACPI APIC support**
    Use this item to enable or disable APIC (Advanced Programmable Interrupt Controller) mode that provides symmetric multi-processing (SMP) for systems.

- **Remote Access**



- **Serial port number**
  This item specifies the base I/O port address and Interrupt Request address of serial port 1. The Optimal setting is *3F8/IRQ4*.

- **Serial Port Mode**
  This item allows you to setup the data transfer rate for the console port. The default value is 115200. Available options are "*9600*", "*19200*", "*38400*", "*57600*" and "*115200*".

- **Flow Control**
  This item allows you to select flow control for console redirection. The configuration options: None, Hardware and Software.

- **Redirection After BIOS POST**
  Use this item to enable or disable the function of Console Redirection, which allows you maintain a system from a remote location. The default setting is *Always*.

- **Therminal Type**
  This item allows you to select the target therminal type.

Configuration options: ANSI, VT100 and VT-UTF8.

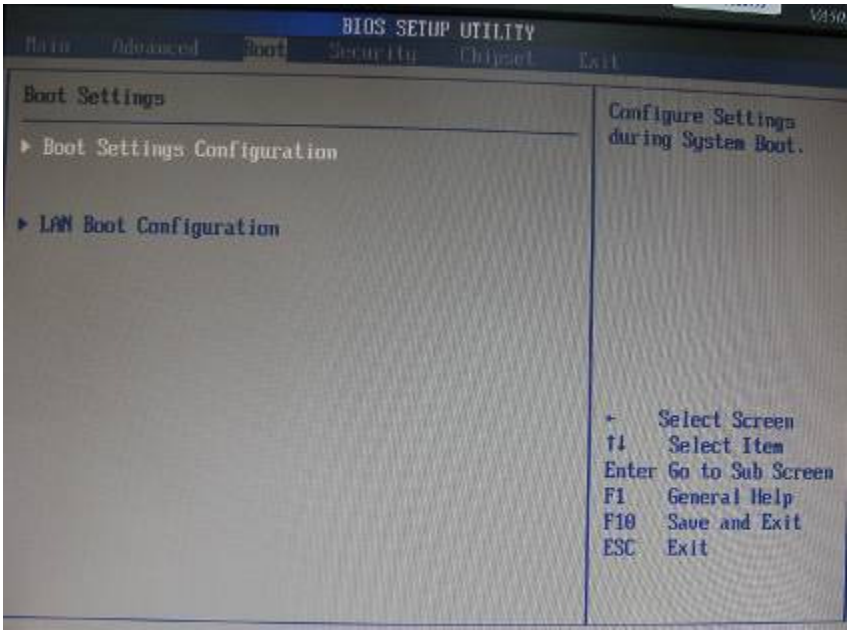
- **VT-UTF8 Combo Key Support**
  Use this item to "Enabled" or "Disabled" VT-UTF8 combination key supports for ANSI / VT100 therminals.

- **Sredir Memory Display Delay**
  This item allows you to indicate the length of time in seconds to off the memory display delay. The default setting is "No delay".

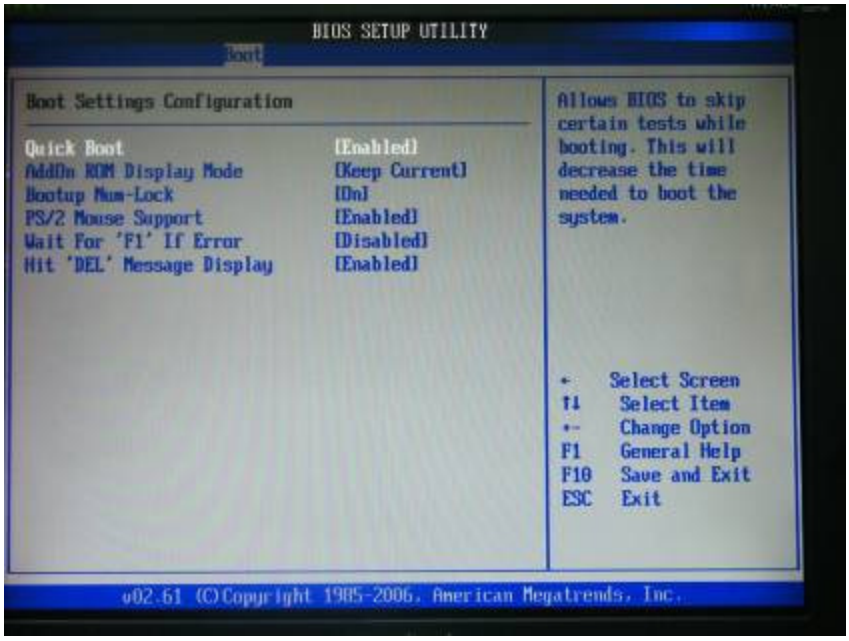
3.5 Boot Menu

The Boot menu allows users to change boot options of the system. You can select any of the items in the left frame of the screen to go to the sub menus:

For items marked with "►", please press <Enter> for more options.



- **Boot Setting Configuration**


BIOS SETUP UTILITY
Boot
Boot Settings Configuration
Quick Boot [Enabled]
AddOn ROM Display Mode [Keep Current]
Bootup Num-Lock [On]
PS/2 Mouse Support [Enabled]
Wait For 'F1' If Error [Disabled]
Hit 'DEL' Message Display [Enabled]
Allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system.
← Select Screen
↑↓ Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit
v02.61 (C)Copyright 1985-2006, American Megatrends, Inc.

- **Quick Boot**
  Enabling this item lets the BIOS skip some power on self tests (POST). The default setting is *Enabled*.
- **AddOn ROM Display Mode**
  This item selects the display mode for option ROM. The default setting is *Force BIOS*.
- **Boot Num-Lock**
  Use this item to select the power-on state for the NumLock. The default setting is *On*.
- **PS/2 Mouse Support**
  This item determines if the BIOS should reserve IRQ12 for the PS/2 mouse or allow other devices to make use of this IRQ. Here are the options for your selection, *Auto*, *Enabled* and *Disabled*.

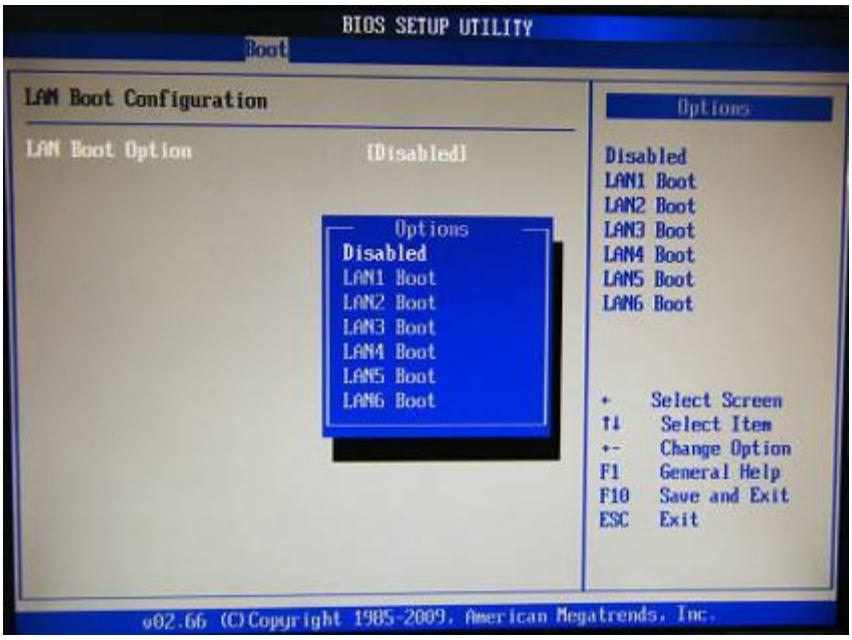
- **Wait For 'F1' Of Error**
  If this item is enabled, the system waits for the F1 key to be

pressed when error occurs. The default setting is *Enabled*.

- **Hit 'DEL' Message Display**
  If this item is enabled, the system displays the message "Press DEL to run Setup" during POST. The default setting is *Enabled*.

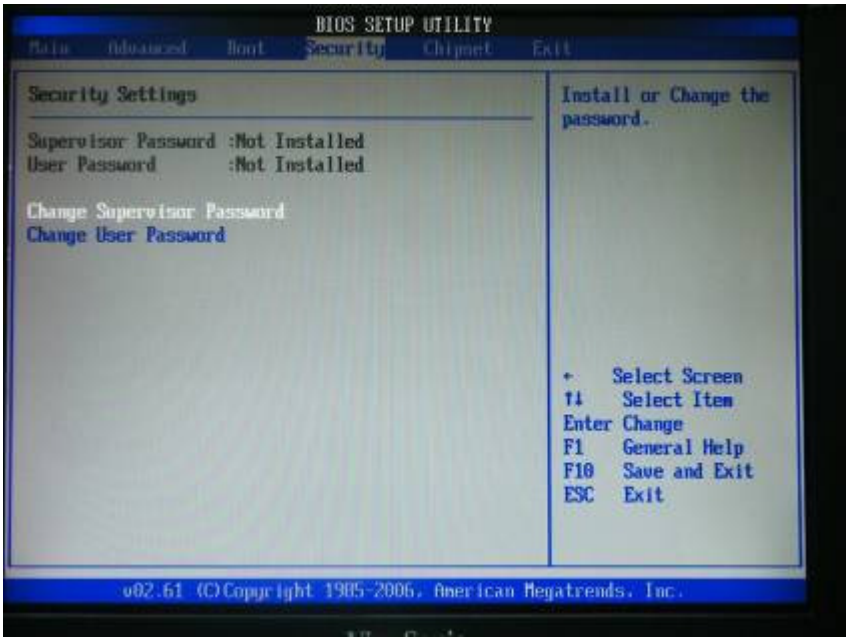
- **LAN Boot Configuration**

This item allows you to select the value of the LAN boot function.



3.6 Security Menu

The Security menu allows users to change the security settings for the system.



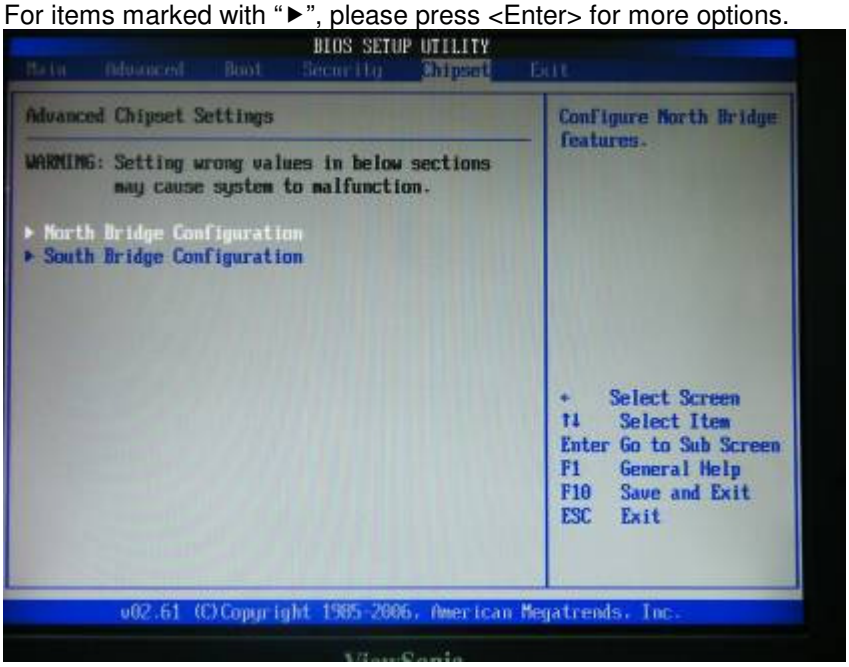
- **Supervisor Password**
  This item indicates whether a supervisor password has been set. If the password has been installed, Installed displays. If not, Not Installed displays.
- **User Password**
  This item indicates whether a user password has been set. If the password has been installed, Installed displays. If not, Not Installed displays.
- **Change Supervisor Password**
  Select and press <Enter> to access the sub menu. You can use the sub menu to change the supervisor password.
- **Change User Password**
  Select and press <Enter> to access the sub menu. You can use the sub menu to change the user password.

3.7 Chipset Menu

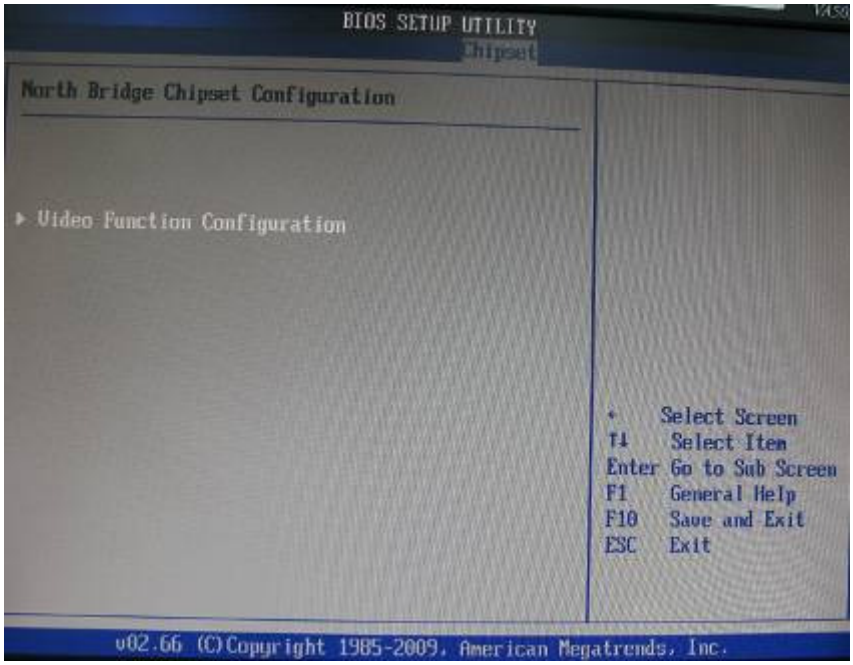
The Chipset menu allows users to change the advanced chipset settings. You can select any of the items in the left frame of the screen to go to the sub menus:

- North Bridge Configuration
- South Bridge Configuration

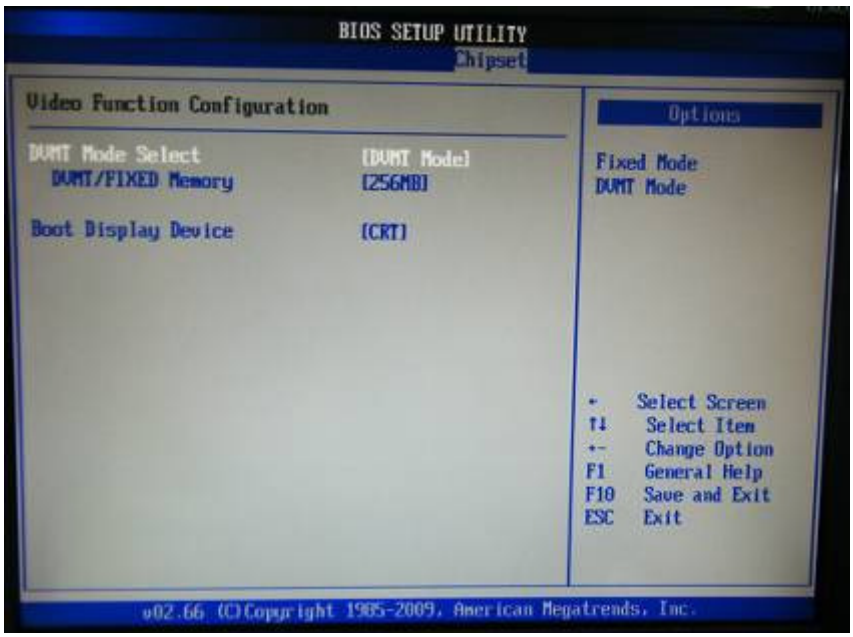
For items marked with "►", please press <Enter> for more options.



- **North Bridge Configuration**
  You can press <Enter> for more options about your North Bridge configuration.



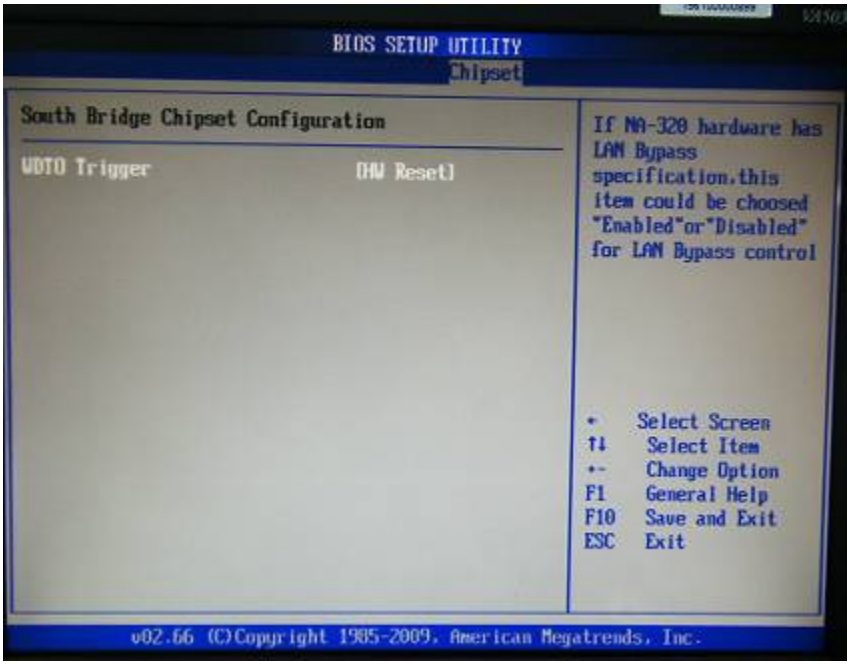
- **Video Function Configuration**
  This item is for setting up the video function.



- **DVMT Mode Select**

DVMT (Dynamic Video Memory Technology) helps you select the video mode.

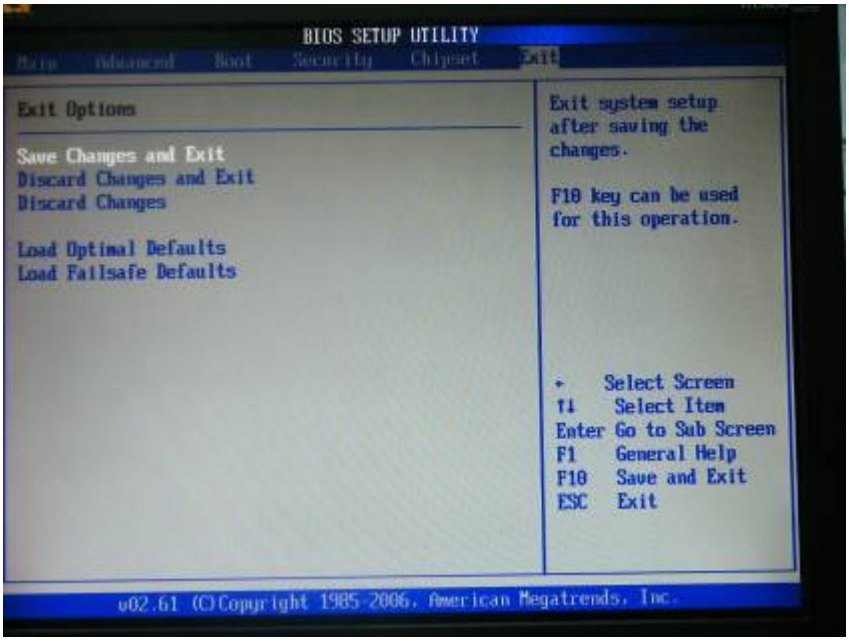
- **South Bridge Configuration**



- **WDTO Trigger**
  The selections for this item are "HW Reset" / "LAN by pass". If the system hardware has LAN by pass specification, this item could be choosed to enable for LAN by pass control.

3.8 Exit Menu

The Exit menu allows users to load your system configuration with optimal or failsafe default values.



- **Save Changes and Exit**
  When you have completed the system configuration changes, select this option to leave Setup and reboot the computer so the new system configuration parameters can take effect. Select *Save Changes and Exit* from the Exit menu and press <Enter>. Select Ok to save changes and exit.

- **Discard Changes and Exit**
  Select this option to quit Setup without making any permanent changes to the system configuration. Select *Discard Changes and Exit* from the Exit menu and press <Enter>. Select Ok to discard changes and exit.

- **Discard Changes**
  Use this item to abandon all changes.

- **Load Optimal Defaults**
  It automatically sets all Setup options to a complete set of default settings when you select this option. The Optimal settings are designed for maximum system performance, but may not work best for all computer applications. In particular, do not use the Optimal Setup options if your computer is experiencing system configuration problems. Select Load Optimal Defaults from the Exit menu and press <Enter>.

- **Load Fail-Safe Defaults**
  It automatically sets all Setup options to a complete set of default settings when you select this option. The Fail-Safe settings are designed for maximum system stability, but not maximum performance. Select the Fail-Safe Setup options if your computer is experiencing system configuration problems. Select Load Fail-Safe Defaults from the Exit menu and press <Enter>. Select Ok to load Fail-Safe defaults.

APPENDIX A
ENABLING LAN BYPASS FEATURE

What is the LAN by-pass meant for **NA-320 Series**? It doesn't have any down time in network connections for two other network segments (LAN1 and LAN2) when any fetal errors occur to this device.

The LAN by-pass feature covers three levels as below:

1. **Power loss**
   While the AC power loss occurs to this device, the LAN1 and LAN2 still can communicate with each other through hardware relay like as a short cut between two segments. If the power inlet can be normally done, the relay will turn to another correct position.
2. **GPIO control**
   It acts like a switch of the application software. You can enable the hardware relay feature through the GPIO control through the application programs. Then, the software solution provider can be more flexible to make it close with the program.
3. **WDT (Watchdog Timer)**
   The hardware supports the WDT (Watchdog Timer) function. While time-out happens after a defaulted period, the WDT will reset the system or make a short cut for two specific segments by hardware relay.

   Note: Please refer to BIOS "WDT function selection".

The sample codes for the above features can be found in the CD, and they are only for customers' reference as remarked.

APPENDIX B

WARNING

- This is a class B Product. In a domestic Environment this Product may cause radio interference in which case the user may be required to take adequate measures.

- It will be danger if battery is incorrectly replaced. Replacing only with the same or equivalent type is highly recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Warning for Hard Disk Drive Selection:

TUV approved Hard Disk Drive is preferred for TUV compliance Hard Disk drive-Optional, (NWGQ2), generic, Input Voltage rated 5V dc/1.0A, 12V dc/1.8A maximum. Minimum clearance from uninsulated live parts 4.0 mm.

"The equipment is to be installed in an environment with maximum ambient temperature must not exceed 45°C."

"The openings on the enclosure are for air convection hence protected the equipment from overheating.

DO NOT COVER THE OPENINGS."

"Lay this equipment on a reliable surface when install.

A drop or fall could cause injury."

"The equipment shall be installed according to specification as nameplate. Make sure the voltage of the power source when connect the equipment to the power outlet.

The current of load and output power of loads shall be not over the specification.""This equipment must be connected to the reliable earthling before using."

Electric shock hazard inside the redundant power supply

The exchange of modules shall be done by service person.